

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-174 (cancelled).

Claim 175 (currently amended): An *in vitro* method for the generation of cartilage tissue from mammalian ~~cartilage~~ chondrocyte progenitor cells expressing mechanosensitive ~~TREK TWIK-~~ related potassium (TREK) ion channels, the method comprising:

- (i) providing mammalian ~~cartilage~~ chondrocyte progenitor cells in culture *in vitro*, wherein the cells express mechanosensitive TREK ~~potassium~~ ion channels;
- (ii) providing magnetizable particles comprising a magnetic core and biocompatible coating, wherein the magnetizable particles are tagged with one or more antibodies specific for said TREK ~~potassium~~ ion channels;
- (iii) contacting said cells with said magnetizable particles and allowing the magnetizable particles to couple with said TREK ~~potassium~~ ion channels;
- (iv) applying a magnetic field to said cells, the magnetic field thereby applying mechanical force to said magnetizable particles;

the method thereby generating cartilage tissue.

Claim 176 (previously presented): The method of claim 175 wherein the method is for the generation of artificial cartilage tissue.

Claim 177 (cancelled).

Claim 178 (currently amended): The method of claim 175 wherein said TREK ~~potassium~~ ion channel is TREK-1.

Claim 179 (previously presented): The method of claim 175 wherein the magnetic field is a variable magnetic field having a frequency of from 0.1 to 10Hz.

Claim 180 (previously presented): The method of claim 175 wherein the magnetic field has a flux density of 10mT to 1400mT.

Claim 181 (previously presented): The method of claim 175 wherein the magnetizable particles have a mean size of 5000 nm or less.

Claim 182 (previously presented): The method of claim 175 wherein the magnetizable particles comprise elemental iron (Fe), or a compound thereof.

Claim 183 (previously presented): The method of claim 182 wherein the iron compound is an iron salt selected from the group consisting of: magnetite (Fe_3O_4), maghemite ($\gamma\text{Fe}_2\text{O}_3$), greigite (Fe_3S_4), and combinations thereof.

Claim 184 (previously presented): The method of claim 175 wherein the magnetizable particles comprise a chromium compound.

Claim 185 (previously presented): The method of claim 184 wherein the chromium compound is chromium oxide (CrO_2).

Claim 186 (currently amended): A method for the generation of new cartilage tissue in a patient, wherein the new cartilage tissue is generated from cartilage chondrocyte progenitor cells expressing mechanosensitive ~~TREK~~ TWIK-related potassium (TREK) ion channels, the method comprising:

- (i) providing magnetizable particles comprising a magnetic core and biocompatible coating, wherein the magnetizable particles are tagged with one or more antibodies specific for said TREK ~~potassium~~ ion channel;
- (ii) administering said particles to a mammalian patient in need of generation of new cartilage tissue, wherein said particles are administered to a site in the patient at which new cartilage tissue is required to be generated and at which ~~cartilage~~

chondrocyte progenitor cells expressing the mechanosensitive TREK ~~potassium~~ ion channel are present, and allowing the magnetizable particles to couple with said TREK ~~potassium~~ ion channels;

- (iii) applying a magnetic field to said cells, the magnetic field thereby applying mechanical force to magnetizable particles in the body of the patient;

the method thereby generating new cartilage tissue at said site.

Claim 187 (previously presented): The method of claim 186 wherein the method involves wound healing in the patient through the generation of new cartilage tissue.

Claim 188 (cancelled).

Claim 189 (currently amended): The method of claim 186 wherein said TREK ~~potassium~~ ion channel is TREK-1.

Claim 190 (currently amended): The method of claim 186 wherein the magnetic field is a variable magnetic field having a frequency of from 0.1 to 10Hz.

Claim 191 (currently amended): The method of claim 186 wherein the magnetic field has a flux density of 10mT to 1400mT.

Claim 192 (currently amended): The method of claim 186 wherein the magnetizable particles have a mean size of 5000 nm or less.

Claim 193 (currently amended): The method of claim 186 wherein the magnetizable particles comprise elemental iron (Fe), or a compound thereof.

Claim 194 (currently amended): The method of claim 193 wherein the iron compound is an iron salt selected from the group consisting of: magnetite (Fe_3O_4), maghemite ($\gamma\text{Fe}_2\text{O}_3$), greigite (Fe_3S_4), and combinations thereof.

Claim 195 (currently amended): The method of claim 186 wherein the magnetizable particles comprise a chromium compound.

Claim 196 (currently amended): The method of claim 195 wherein the chromium compound is chromium oxide (CrO_2).